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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,064	10/13/2000	David B. Miller	10001197-1	1275

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AGILENT TECHNOLOGIES, INC.  
INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT.  
P.O. BOX 7599  
M/S DL429  
LOVELAND, CO 80537-0599

EXAMINER

TRAN, MINH LOAN

ART UNIT	PAPER NUMBER
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2826

#4

DATE MAILED: 05/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicant(s)

09/688,064

Applicant(s)

MILLER ET AL.

Examiner

Minhloan T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-13 in Paper No. 3 is acknowledged.
2. The Preliminary Amendment filed on 04/04/2002 has been entered.

### ***Information Disclosure Statement***

3. The information disclosure statement filed 10/13/2000 has been considered.

### ***Oath/Declaration***

4. The oath/declaration filed on 10/13/2000 is acceptable.

### ***Drawings***

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: The fiber optic ribbon interconnect 14 as described on page 7, line 26 of the specification.
6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the integrated circuit formed on the spacer substrate as recited in claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Note that figure 6A only shows the integrated circuit 120 is formed in the spacer substrate 80.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 11, 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Feldman et al. (5,923,796).

Feldman et al. discloses a microelectronic module comprising an optical device system which comprises an optical device substrate 45 supporting one or more optical devices 13, 15 (13', 15') and a solderable metallization pattern 22, 23 (22', 23) having a spatial arrangement with respect to the one or more optical devices 13, 15 (13', 15'); an optical lens system which comprises one or more optical optical lens 25, 26 (25', 25"', 25''') and a device bonding surface of the substrate 17 (17') supporting a solderable metallization patterns 20, 21 (20', 21') having a spatial arrangement with respect to the one or more optical lenses 25, 26; and a plurality of solder bumps 24 (24') disposed between the metallization patterns 22, 23 of the optical device system and the metallization patterns 20, 21 of the optical lens system; wherein the plurality of solder bumps 24 (24') bond the optical device substrate 45 to the device bonding surface of

the substrate 17 (17') with the one or more optical devices 13, 15 aligned with the one or more optical lenses 25, 26. Note figures 1-8 of Feldman et al.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebby et al. (5,337,397).

Lebby et al. discloses an optical coupling device comprising an optical device system which comprises an optical device substrate 103 supporting an optical device 104; an optical lens system which comprises an optical lens 102 and a device bonding surface of the substrate 108 supporting a solderable metallization patterns 112 having a spatial arrangement with respect to the optical lens 102; and a plurality of solder bumps 113 disposed between the optical device system and the metallization patterns 112 of the optical lens system; wherein the plurality of solder bumps 113 bond the optical device substrate 103 to the device bonding surface of the substrate 108 with the optical device 104 aligned with the optical lens 102; and the lens 102 is recessed below the device bonding surface of the substrate 108. Note figure 1 of Lebby et al.

Lebby et al. does not disclose the optical device system having a metallization pattern that has a spatial arrangement with respect to the optical device 104. However,

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it would have been obvious to one of ordinary skill in the art to form the optical device substrate 103 of Lebby et al. having a metallization pattern at the surface, because that structure is conventional in the art for bonding the plurality of substrates together using flip chip bonding method. Note figures 1-8 of Feldman et al. are cited to support for the well known position.

Claims 4-8, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feldman et al. (5,923,796) in view of Wickman et al. (US 2002/0034363).

With regard to claims 4, 7, 8, Feldman et al. discloses all the subject matter claimed except for the spacer substrate. However, Wickman et al. discloses an optical coupling device comprising the optical device system, which comprises a substrate 8 supporting an optical device 1; an optical lens system which comprises an optical substrate 5 incorporating the lens 14 and a device bonding surface defines one face of the spacer substrate 29. Note figures 4-7 of Wickman et al. It would have been obvious to one of ordinary skill in the art to form the optical lens system of Feldman et al. having a spacer substrate such as taught by Wickman et al. for aligning an array of optical devices with the optical elements.

With regard to claims 5 and 6, Feldman et al. and Wickman et al. do not disclose the optical substrate 5 is bonded to the spacer substrate 29 by a wafer bonding process or a flip-chip solder bonding process. However, Applicant's claims 5 and 6 do not distinguish over the Feldman et al. and Wickman et al. references regardless of the process used to bond the substrates together, because only the final product is

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relevant, not the process of making such as wafer bonding process or flip-chip solder bonding process.

Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marosi et al.*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear. See also MPEP 706.03(e).

### ***Allowable Subject Matter***

9. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 9 and 10 are allowable over the prior arts of record because none of these references disclose or can be combine to yield the claimed invention such as an integrated circuit bonded to the spacer substrate and configure to drive one or more the optical devices.

### **Conclusion**


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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minhloan T. Tran whose telephone number is (703) 308-4919. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MLT  
05/2002

  
Minhloan T. Tran  
Primary Examiner  
Art Unit 2826